IN THE UNITED STATES DISTRICT COURT FOR
THE DISTRICT OF MARYLAND, NORTHERN DIVISION

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CHRISTINA CINAGLIA,

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Plaintiff,

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v. CIVIL NO.: WDQ-10-2172

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DENNIS PAUL BENEVICZ

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Defendant.

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MEMORANDUM OPINION

Christina Cinaglia sued Dennis Paul Benevicz for her injuries from a boating accident. Pending are Benevicz's motion in limine to exclude the testimony of Captain Richard Dein and Cinaglia's motion in limine to exclude Dual Energy X-ray Absorptiometry ("DXA") scans and certain opinions of Louis S. Halikman, M.D. under *Daubert v. Merrell Dow Pharmaceuticals*.[1] For the following reasons Benevicz's motion will be denied. Cinaglia's motion will be granted in part and denied in part.

I. Background

A. Factual and Procedural History[2]

On August 11, 2007, Cinaglia, then 27 years old, was injured while riding a 17' Boston Whaler boat driven by

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[1] 509 U.S. 579 (1993).

[2] The basic factual background is not in dispute and is drawn from the parties' submissions in the proposed pretrial order.

Benevicz. *See* ECF No. 54 at 1, 4. Cinaglia was seated in the bow looking aft. *Id.* at 2, 4. The boat hit the wake from another vessel, Cinaglia fell and suffered a fracture to her L-1 vertebra. *See id.* at 2-4.

On August 9, 2010, Cinaglia sued Benevicz for damages arising from her injury. ECF No. 1. On April 16, 2012, Benevicz moved in limine to exclude the testimony of Dein. ECF No. 50. On May 1, 2012, Cinaglia responded. ECF No. 52.

On April 17, 2012, Cinaglia moved to exclude DXA scans and certain testimony from Halikman. ECF No. 51. On May 4, 2012, Benevicz responded, ECF No. 53, and on May 21, 2012 Cinaglia replied, ECF No. 55.

B. Dein's Report

Dein has been a licensed Coast Guard Master since 1962. ECF No. 50-4 at 1. He retired from the Coast Guard in 1989 as a Commander. ECF No. 52-2 ¶ 3. He has written and edited several publications including works on search and rescue and seamanship. ECF No. 50-4 at 1-2.

On February 28, 2011, Dein wrote a report about the accident analyzing, *inter alia*, affidavits, testimony, and conversations with Cinaglia, Benevicz, and other witnesses, meteorological data, nautical charts, *CHAPMAN Piloting and*

Seamanship,[3] and the relevant statute, 46 U.S.C. § 2302. ECF No. 52-4.

On May 11, 2011, Dein was deposed. ECF No. 50-5. He testified that the "common sense" and "common knowledge" of a marine operator indicated that Benevicz breached his duty of care in his operation of the boat and by having Cinaglia sit in the bow. *E.g.*, *id.* at 8 Tr. 32:14. Dein has supplemented his initial report to the parties with numerous additional authorities on boating accidents and wakes. *See* ECF No. 52-2 ¶ 16.

C. The DXA Scans

December 2003 to March 2008, Cinaglia was employed at the Children's Hospital of Philadelphia ("CHOP"). ECF No. 51-16 ¶ 2. There she completed training to operate DXA scanning equipment.[4] *Id.*

One of the entities at CHOP is the Nutrition and Growth Laboratory ("NGL"). ECF No. 51-15 ¶ 3. There, equipment

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[3] Dein describes this book as "[t]he 'bible' of small boat navigation and seamanship." ECF No. 52-4 at 5.

[4] A DXA scan uses low dose x-rays of the lower spine and hips to measure bone mineral density. *Bone Mineral Density Test*, MedlinePlus, http://www.nlm.nih.gov/medlineplus/ency/article/007197.htm (last accessed Feb. 18, 2013). The scan image uses lines to demarcate the vertebrae. *See* ECF No. 51-13. For premenopausal women, the scan results are presented through a "Z-score," comparing the patient with a reference database for her age range. *See* ECF Nos. 51-17, 51-18.

operators undergo a training procedure before they may use the DXA machine without supervision. *Id.* DXA scans performed by NGL staff are used for research purposes only. *Id.* DXA scans performed at CHOP for treatment or diagnosis are performed by Registered Nurses. *Id.* DXA scans intended to be used for research are reviewed by the Director of the NGL to ensure that the patient was positioned properly, and the lines for analysis were properly placed in the computer image. *Id.* ¶ 9.

On August 9, 2004 and July 7, 2006, DXA scans of Cinaglia's lumbar spine were taken for testing purposes at the NGL. ECF No. 51-13. The identities of the persons who performed these scans are unknown; it is similarly unknown whether they had completed their certification. ECF No. 51-15 ¶¶ 5, 6. The images were marked "Image not for diagnostic use" and are accompanied by a cover letter stating that they were made for training purposes. ECF No. 51-13.

On February 28, 2008, Cinaglia had a DXA scan performed at the NGL because she was interested in seeing an image of her spine. ECF No. 51-16 ¶ 4. She told this to the operator, who did not analyze the image or adjust the lines on the computer. *Id.*

Pursuant to a Court order, on January 26, 2012, a DXA scan was performed on Cinaglia. ECF No. 51-14; *see* ECF No. 43.

D. Halikman's Report

Halikman is an orthopedic surgeon at Mercy Medical Center, and has been board certified in that field since 1977. ECF No. 51-11. He is a member of the North American Spine Society. *Id.* He was formerly the Chief of Orthopedic Surgery and Vice Chief of Medical Staff at Church Hospital. *Id.*

From April 11, 2011, to February 1, 2012, Halikman prepared eight reports on Cinaglia's condition. ECF No. 51-12. On April 11, 2011, Halikman examined Cinaglia. *Id.* at 2. He discussed the boating accident with her and reviewed accident reports. *Id.* at 2, 8. Halikman reviewed several x-rays and MRIs taken of the injury. *Id.* at 4-5. Halikman diagnosed a compression fracture at L1, with compression of between 35 and 40%.[5] *Id.* at 8.

Halikman later reviewed the 2004, 2006, and 2008 DXA scans, and stated that Cinaglia's bone mass density was not as great as it should have been; this indicated that she "was clearly at risk for an injury as a result of an incident which in an otherwise normal person would have caused no injuries at all." *Id.* at 12. This low density explained why Cinaglia suffered a

[5] Halikman's initial report describes the injury as a burst fracture, but a subsequent report indicates that this was an error. ECF No. 51-12 at 14.

compression fracture. *Id.* at 15. Halikman had previously only seen burst fractures in young people.[6] *Id.*

Consistently throughout his reports, Halikman opined that Cinaglia's bone density was lower "than would be expected for a young lady of her age." *E.g.*, *id.* at 17. From her early DXA scans, Halikman diagnosed her with osteoporosis. *Id.* at 16.

On February 1, 2012, Halikman prepared his final report, incorporating the January 26, 2012, DXA scan. *Id.* at 19. There, he acknowledged, that Cinaglia's bone densities of -1.2, -1.6, and -1.7, were within the official normal range because they were less than -2.0. *Id.* However, he noted that these differed little from her previous scans, including the February 2008, "when many of the numbers were greater than -2.0." *Id.* He concluded that although the numbers were not sufficiently abnormal for a diagnosis of osteoporosis "by the most strict definition,"[7] "the fact that the numbers are all significantly in the negative range" indicated that Cinaglia had "decreased bone density compared to her peers." *Id.*

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[6] Halikman explained that unlike a compression fracture, in a burst fracture the vertebra has "retropulsed fragments." ECF No. 51-12 at 15. Retropulsion is being pushed backwards. Oxford English Dictionary (3d ed. 2010).

[7] The official position of the International Society for Clinical Densitrometry ("ISCD") is that "A Z-score of -2.0 is defined as 'below the expected range for age,' and a Z-score above -2.0 is 'within the expected range for age.'" ECF No. 51-17 at 4.

II. Analysis

A. *Daubert* Standard for Expert Testimony

Under Fed. R. Evid. 702, expert testimony is admissible if it will assist the trier of fact and is (1) "based on sufficient facts or data," and (2) "the product of reliable principles and methods," and (3) the principles and methods have been applied "*reliably* ... to the facts of the case." Fed. R. Evid. 702. As the *Daubert* Court has explained, evidence is admissible under Rule 702 if "it rests on a reliable foundation and is relevant."[8] One aspect of relevance is whether the opinion is valid—that is, whether it "is sufficiently tied to the facts of the case."[9] The proponent of the expert testimony must prove its admissibility

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[8] *Daubert*, 509 U.S. at 597; *see also Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 141 (1999) (extending *Daubert* to "the testimony of engineers and other experts who are not scientists").

[9] *United States v. Downing*, 753 F.2d 1224, 1242 (3d Cir. 1985), *cited in Daubert*, 509 U.S. at 591. Equating "validity" with "fit," the *Daubert* Court explained that "Rule 702's 'helpfulness' standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Daubert*, 509 U.S. at 591-92.

> 'Fit' is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes. The study of the phases of the moon, for example, may provide valid scientific 'knowledge' about whether a certain night was dark ... However ..., evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally on that night.

Id. at 591 (internal citations omitted).

by a preponderance of the evidence. *Daubert*, 509 U.S. at 592 n. 10.

Several factors may be relevant to the determination of reliability, including: (1) whether a theory or technique has been tested, (2) whether it has been subjected to peer review and publication, (3) the known or potential rate of error, and (4) whether the theory or technique is generally accepted within a relevant scientific community. *Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 199 (4th Cir. 2001). The factors are "neither definitive nor exhaustive, and some may be more pertinent than others depending on the nature of the issue, the expert's particular expertise and the subject of his testimony." *Newman v. Motorola, Inc.*, 218 F. Supp. 2d 769, 773 (D. Md. 2002) (internal quotation marks omitted).

B. Motion in Limine to Exclude Dein's testimony

Benevicz argues that Dein's testimony should be excluded because it is not reliable under *Daubert*. ECF No. 50. Cinaglia asserts that Dein properly examined the evidence in this case, consulted proper materials, and properly based his expertise on his experience. ECF No. 52.

"[T]he text of Rule 702 expressly contemplates that an expert may be qualified on the basis of experience." Fed. R. Evid. 702 advisory committee's note; *see United States v. Wilson*, 484 F.3d 267, 274 (4th Cir. 2007). Dein's curriculum

vitae reveals decades of experience in the maritime industry. *See* ECF No. 50-4.

Benevicz asserts that Dein relied on "common sense" [10] rather than standards for his determination that Benevicz breached the duty of care by having Cinaglia sit in the bow. ECF No. 50-1 at 8. Dein will testify as to the standard of care of boat operators in general, and how this particular situation factored into it. *See* ECF No. 50-3 (report). Further, Dein's description of Benevicz's negligence is not limited solely to Cinaglia's seat but also to Benevicz's speed and approach to the wake. *See id.* at 8-9.

In forming his opinion, in addition to his experience, Dein relied on *CHAPMAN Piloting and Seamanship*, the Boston Whaler's Owner's Manual, and a federal statute for marine negligence liability, 46 U.S.C. § 2302. ECF No. 50-3 at 5-6. Dein has also supplemented his initial report with additional authorities concerning the safety of seating and boat wakes. *See* ECF Nos. 52-7, 52-8, 52-9. This background shows Dein's opinion is sufficiently reliable.

Benevicz also complains that Dein relied on the statements of Cinaglia and other witnesses over that of Benevicz. ECF No. 50-1 at 9-13. Fed. R. Evid. 705 permits cross-examination of

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[10] Dein also used the term "common knowledge" at his deposition. ECF No. 50-5 at 8 Tr. 32:14.

the expert to disclose the facts he relied upon. "Expert testimony is not inadmissible simply because it contradicts eye witness testimony." *Greenwell v. Boatwright*, 184 F.3d 492, 497 (6th Cir. 1999). To the extent that Benevicz argues that a contrary interpretation would be due under his version of the facts, his counsel may cross-examine Dein.

Finally, Dein relies heavily on *Holesapple v. Barrett*, 5 F. App'x 177 (4th Cir. 2001), where the Fourth Circuit upheld the exclusion of an admiralty expert. *See* ECF No. 50-1 at 5-6. Unlike the expert in *Holesapple*, Dein relied upon weather reports, considered other vessels, referred to publications, and obtained operating manuals. *See* ECF Nos. 50-3, 52-7, 52-8, 52-9; *cf. Holesapple*, 5 F. App'x 179-180.

Dein's expertise and testimony are reliable and will be helpful to the jury, who may have little experience with boats. Benevicz's motion to exclude will be denied.

C. Motion in Limine to Exclude Halikman's Testimony

Cinaglia asks the court to exclude the DXA scans prior to 2012 and Halikman's testimony about those DXA scans prior to 2012 and her low bone density causing her injury as unreliable. ECF No. 51-1.

1. DXA Scans

First, Cinaglia asserts that the 2004, 2006, and 2008 DXA scans are unreliable. ECF No. 51-1 at 7. Benevicz asserts that

the scans are not unreliable because they produced consistent results. ECF No. 53 at 9.

The DXA scans performed by the NGL staff are for research purposes only; registered nurses perform scans for treatment or diagnostic purposes. ECF No. 51-5 ¶ 3. The 2004 and 2006 scans indicate that they were made for training purposes, and it is unknown whether the operators had completed their training. *Id.* ¶¶ 5-6. It is unknown whether the operators were interested in the image or were actually attempting to determine bone mass density. *Id.* ¶ 7. Before scan results can be used for research, the Director of NGL reviews them to make sure the patient and lines were properly positioned. *Id.* ¶ 9. It is unknown if the Director ever reviewed the 2004 and 2006 scans. *Id.* ¶ 10.

Cinaglia swore than she had the 2008 scan made because she wanted to see her spine after her recovery from her injury. ECF No. 51-16 ¶ 4. The operator knew that she was interested in seeing only the image. *Id.* The operator did not analyze the image or adjust the lines as required for an accurate reading of bone mass density. *Id.* The only evidence that these scans are reliable is Halikman's assertion that the results are consistent. ECF No. 51-12 at 17.

The evidence is clear that the scans were produced without the intention that they would ever be used for a medical

diagnosis. Instead, they were made either for training purposes, by individuals whose training status was unknown, or to satisfy Cinaglia's curiosity. Although the results may be consistent, their provenance puts their reliability in serious doubt. Further, admission of the scans or testimony about them would lead to significant testimony at trial about the purpose of the training and the scans, which are collateral to the issues at trial; this would be a waste of time and would likely confuse the issues for the jury. *See* Fed. R. Evid. 403. Accordingly, the 2004, 2006, and 2008 DXA scans are unreliable and inadmissible. Halikman will not be permitted to testify about these scans or his conclusions derived from them.

2. The Fracture, Reduced Bone Mass, and the Accident

Much of the remaining dispute concerns Halikman's description of Cinaglia's injury as a compression fracture. Cinaglia asserts that she suffered a burst fracture and that Halikman improperly failed to differentiate between a burst fracture and a compression fracture. *See* ECF No. 51-1 at 22. Benevicz asserts that the evidence shows that it was a compression fracture. ECF No. 53 at 9-10. Benevicz is correct that there is other medical evidence showing a compression fracture. *See, e.g.*, ECF Nos. 53-1, 53-13, 53-14, 53-19. Halikman's opinion is sufficiently reliable; the factual dispute about the type of fracture is for the jury to resolve.

Nevertheless, Cinaglia argues that Halikman's testimony should be excluded because he failed to consider other possible causes for Cinaglia's injury. ECF No. 51-1 at 24. Halikman explains that "[c]ompression fractures occur because of loss of bone material. . . . If the bone mineral content is normal, a burst fracture typically occurs." ECF No. 51-12 at 15. Halikman's conclusion is that this low bone mass caused the compression fracture. *Id.* He further states that he had only ever prior seen a burst fracture in young people. *Id.*

It is apparent that Halikman does not believe that Cinaglia's L1 fractured simply because of its low density. *See* ECF No. 53 at 12. Rather, it was because of its low density that the impact on the boat caused the compression fracture. Halikman ruled out a burst fracture because he did not observe "retropulsed areas of bony injury." Halikman has sufficiently considered alternative explanations. *Cf. Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 203 (4th Cir. 2001) (finding unreliable expert testimony unreliable where he did not describe how he ruled out other causes such as smoking).

Next, Cinaglia asserts that the 2012 DXA scan disproved Halikman's diagnosis of low bone mineral density and that he ignored evidence that her bone density was normal. *See* ECF No. 51-1 at 23. Benevicz asserts that although the range was technically normal, the result was still low. ECF No. 53 at 13.

Halikman's final report, after he obtained the 2012 scan, acknowledges that Cinaglia's bone density was "officially within the normal range." ECF No. 51-12 at 19. However, he explains that a Z score of 0 represents the average bone density; any number with a minus sign represents a decreased bone density." *Id.* Therefore, her densities of -1.2, -1.6, -1.7, were "trending downward," but not at the -2.0 level required to be "considered significantly abnormal." *Id.* The ISCD ranges are that "[a] Z-score of -2.0 or lower is defined as 'below the expected range for age,' and a Z-score above -2.0 is 'within the expected range for age.'" ECF No. 51-17.

From these definitions it is clear the normal range extends down to -2.0. However, the density decreases with the number, even if the number is still within the normal range. Halikman's analysis indicates that even within the normal range, having a low number indicates a decreased bone density. *See* ECF No. 51-12. This explanation is not unreliable.

Cinaglia also challenges Halikman's analysis of the causation of the accident and his conclusion that a person with normal bone mass density would not have been injured. ECF No. 51-1 at 21-22. Benevicz appears to assert that Halikman can testify to the causation because that is the essence of orthopedic injuries. *See* ECF No. 53 at 13.

As discussed above, Halikman's analysis of bone mass density and the compression fracture is reliable. Halikman's report states that he discussed the accident with Cinaglia and reviewed "[t]he accident investigation reports." ECF No. 51-12 at 8. This provides sufficient basis for his opinion that Cinaglia was injured, but a person with normal bone mass density would not have been. Although Cinaglia disputes Halikman's conclusion and the evidence upon which he relied, that is properly the subject for cross-examination. *See Daubert*, 509 U.S. at 596.

Finally, Cinaglia asserts that Halikman's final report contradicts his previous reports, rendering all his opinions on causation unreliable. *See* ECF No. 51-1 at 11. Benevicz contends that although the 2012 DXA scan does not support Halikman's previous diagnosis of osteoporosis, it does not change the underlying opinion of Cinaglia's low bone density contributing to her injury. ECF No. 53 at 13. Halikman's final report shows that he properly considered the new evidence with which he was presented, and his findings regarding the Z-scores complied with the technical definitions. *See* ECF Nos. 51-12 at 19, 51-17.

Cinaglia clearly disputes Halikman's conclusion that low bone mass density was a factor in her injury. The method for the resolution of these conflicts is cross examination and

presentation of contrary expert testimony.[11] However, Halikman's analysis that the 2012 DXA scan shows that Cinaglia has a lower bone density than the average and that could have contributed to her injury is reliable. He will be permitted to testify to this effect.

The motion will be granted in part and denied in part. Halikman may testify to the compression fracture, the content and his opinions of the 2012 DXA scan, the causation of the accident, and whether a normal person would have been injured. He may not testify about the 2004, 2006, and 2008 DXA scans.

III. Conclusion

For the reasons stated above, Benevicz's motion in limine will be denied. Cinaglia's motion in limine will be granted in part and denied in part.

2/21/13
Date

William D. Quarles, Jr.
United States District Judge

[11] *See Daubert*, 509 U.S. at 596 ("Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.")